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A NEW SPECIES OF SHREW (GENUS *CRYPTOTIS*) FROM JALISCO, MEXICO (MAMMALIA; INSECTIVORA)

By Hugh H. Genoways and Jerry R. Choate
Museum of Natural History, The University of Kansas, Lawrence, Kansas 66044

From 6 July to 11 July 1966, vertebrates were collected on Volcán de Fuego, Jalisco, for the Museum of Natural History, The University of Kansas, by Genoways and Percy L. Clifton. On 10 July a shrew of the genus *Cryptotis* was obtained on a steep slope across the valley to the north of the active cone of the volcano. The specimen was caught in a steel trap placed in the tunnel of a pocket gopher; because the opening had not been covered after the trap was set, it could not be determined whether the shrew was using the tunnel as a runway or had entered the opening.

Vegetation on the complex of mountains that includes Volcán de Fuego consists of pine-oak forest up to about 7500 ft; fir, first appearing at 7500 ft, becomes dominant between 8500 and 10,000 ft and occurs in sheltered areas up to 12,000 ft; bunchgrass occurs above 12,000 ft and on exposed slopes as low as 9000 ft (see Goldman, 1951:181; Baker and Phillips, 1965:691). Vegetation at the site (9800 ft) where our shrew was captured consisted of bunchgrass interspersed with low deciduous bushes and small coniferous trees.

The braincase was broken into many fragments by the trap, but the pelage and the remainder of the skull were not damaged. The specimen represents an heretofore unknown species that is named and described below.

Cryptotis euryrhynchis new species

Holotype: Adult male, skin and imperfect skull, no. 107,143 Museum of Natural History, The University of Kansas, from Volcán de Fuego (also called Volcán de Colima), 9800 ft, Jalisco; obtained on 10 July 1966 by Percy L. Clifton (original number 11,059).

Distribution: Known only from the type-locality.

Diagnosis: Size medium for members of the genus both externally and cranially (total length 106, palatal length 8.6); rostrum broad and massive (maxillary breadth 6.7); mesopterygoid fossa broad (pterygoid breadth 3.05); upper parts gray; underparts pale, hairs tipped with pale gray; feet pale brown.

Comparisons: From 16 specimens of *Cryptotis mexicana mexicana* (Coues) from Las Vigas, 8500 ft, Veracruz, *C. euryrhynchis* differs as follows: larger externally (total length 106 as compared to 100); rostrum broader (rostral breadth across parastyle of M2 6.1 as compared to 5.3); palate longer (8.6 as compared to 8.0); mesopterygoid fossa broader (pterygoid breadth 3.05 as compared to 2.7); dentition more massive; upper parts paler; underparts pale gray rather than brown.

From three specimens of *Cryptotis mexicana goldmani* (Merriam) from Omilteme, 7300 ft, Guerrero, *C. euryrhynchis* differs as follows: hind feet longer (14.5 as compared to 12); front feet and claws larger; rostrum broader (rostral breadth across parastyle of M2 6.1 as compared to 5.5); palate longer (8.6 as compared to 8.3); underparts pale gray rather than brown.

From two specimens of *Cryptotis goodwini* (Jackson), one from 5 mi. N, 1 mi. W El Chol, 6000 ft, Guatemala, and the other from 3.5 mi. SW San Juan Ixcoy, 10,120 ft, Guatemala, *C. euryrhynchis* differs as follows: tail shorter (25 as compared to 30); rostrum broader (rostral breadth across metastyle of P4 5.4 as compared to 5.1); palate shorter (8.6 as compared to 9.3); dentition more massive.

From three specimens of *Cryptotis alticola* (Merriam) from Mt. Popocatapetl, Mexico (U. S. Nat. Mus. 52043; 52045–6), *C. euryrhynchis* differs as follows: mesopterygoid fossa broader (pterygoid breadth 3.05 as compared to 2.85); postero-internal cingulum of P4-M2 less extensive; upper parts and underparts gray rather than brown.

Measurements: External and cranial measurements, in millimeters, of the holotype of *Cryptotis euryrhynchis* are given in Table 1. Pterygoid breadth refers to the least distance from the outside of one pterygoid to the outside of the other at a place just behind the posterior end of the palate. Definitions of other cranial dimensions used here, excepting the two pertaining to rostral breadth, are from Jackson (1928:13). All cranial measurements were taken with a binocular microscope equipped with an ocular micrometer and a stage micrometer.

Remarks: The systematic relationships of shrews of the genus *Cryptotis* are difficult to interpret because many populations seem to be isolated at high elevations on mountains (see Hall and Kelson, 1959: 57–64). In addition, there sometimes is considerable variation among specimens from the same population (for example, see Raun, 1965: 215). Certain characteristics used by Merriam (1895) and others to distinguish alleged species probably are age variations. Our one specimen of *Cryptotis euryrhynchis* has distinctive cranial features that are

TABLE 1. Selected measurements of five taxa of *Cryptotis*.

	C. eurirhynchis[1] (1)[2]	*C. mexicana mexicana* (16)	*C. mexicana goldmani* (3)	*C. alticola* (3)[3]	*C. goodwini* (2)
Total length	106	100 (94–105)	100 (97–102)	101 (100–102)	115, 105
Length of tail vertebrae	25	25 (23–28)	27 (25–30)	28 (25–29)	31, 30
Length of hind foot	14.5	13 (13–17)	12 (12–12.5)	15 (14.5–15.0)	14, 14
Palatal length	8.6	8.0 (7.3–8.5)	8.3 (8.1–8.4)	8.9 (8.9–9.0)	—, 9.3
Length of maxillary tooth-row	7.3	6.8 (6.4–7.2)	6.9 (6.9)	7.5 (7.5)	—, 7.8
Interorbital breadth	5.2	4.9 (4.7–5.1)	5.0 (4.9–5.1)	5.0 (5.0)	—, 5.3
Maxillary breadth	6.7	6.1 (5.8–6.4)	6.2 (6.0–6.3)	6.6 (6.6–6.7)	—, 6.4
Rostral breadth across parastyle of M2	6.1	5.3 (5.1–5.6)	5.5 (5.4–5.6)	6.3 (6.3–6.4)	5.9, 6.0
Rostral breadth across metastyle of P4	5.4	4.6 (4.4–4.7)	4.7 (4.6–4.8)	5.5 (5.4–5.6)	5.1, 5.1
Pterygoid breadth	3.05	2.7 (2.6–2.9)	2.8 (2.7–2.9)	2.85 (2.75–2.95)	—, 3.2

[1] Holotype.
[2] Number of specimens examined in parentheses.
[3] Measurements of USNM 52043 and 52045–6.

not likely to vary much with age and that distinguish it from specimens of related species of all age categories that we have examined. Sexual dimorphism is not known in the genus, and none was found in the comparative material.

Judging from external and cranial dimensions, *Cryptotis euryrhynchis* belongs to the *mexicana* group. Two of the characteristics used by Jackson (1933:81) to distinguish *C. goodwini* from *C. mexicana* were depth and breadth of cranium. Because the braincase of the holotype of *C. euryrhynchis* is lacking, we were unable to determine morphologically whether *C. euryrhynchis* resembles *C. mexicana* more than *C. goodwini*.

Cryptotis euryrhynchis is the northernmost known representative of the *mexicana* group in western Mexico. The species in the *mexicana* group that occur nearest Volcán de Fuego are *C. alticola* (Monte Río Frío, 45 km ESE Mexico City—Davis, 1944:376) and *C. mexicana goldmani* (2 mi. W Omilteme, 7900 ft, Guerrero—Davis and Lukens, 1958:350). *Cryptotis goodwini*, known only from farther south (the nearest locality of record is Calel, 10,200 ft, Guatemala—Jackson, 1933: 81) probably is not so closely related to *C. euryrhynchis* as is *C. mexicana*.

The specific name *euryrhynchis* is from the Greek *eurys*, broad, and *rhynchos*, snout. Funds for field work were made available by the Kansas University Endowment Association (Watkins Fund).

Specimen examined: One, the holotype.

Literature Cited

Baker, R. H., and C. J. Phillips. 1965. Mammals from El Nevado de Colima, Mexico. Jour. Mamm., 46: 691–693.

Davis, W. B. 1944. Notes on Mexican mammals. Jour. Mamm., 25: 370–403, 1 Fig.

Davis, W. B., and P. W. Lukens, Jr. 1958. Mammals of the Mexican state of Guerrero, exclusive of Chiroptera and Rodentia. Jour. Mamm., 39: 347–367.

Goldman, E. A. 1951. Biological investigations in Mexico. Smithsonian Misc. Coll., 155: xiii + 476, frontispiece, 70 pls.

Hall, E. R., and K. R. Kelson. 1959. The mammals of North America. Ronald Press, New York, 1: xxx + 546 + 79.

Jackson, H. H. T. 1928. A taxonomic review of the American long-tailed shrews (genera Sorex and Microsorex). N. Amer. Fauna, 51: vi + 238, 13 pls., 24 Figs.

———. 1933. Five new shrews of the genus Cryptotis from Mexico and Guatemala. Proc. Biol. Soc. Washington, 46: 79–82.

Merriam, C. H. 1895. Revision of the shrews of the American genera Blarina and Notiosorex. N. Amer. Fauna, 10: 5–34, 102–107, 3 pls., 2 Figs.

Raun, G. G. 1965. *Cryptotis parva* from Coahuila, Mexico and comments on the taxonomy of the least shrews in Texas. Southwestern Nat., 10: 214–218, 6 Figs.